

Compounds

A pure substance composed of two or more elements that are **chemically combined**

It is a completely brand new substance with new properties. Elements combine usually by reacting or through a chemical change. **The atoms of each element join together to form molecules of new compounds**

Examples

Compound	Elements
Table Salt	Sodium and chlorine
Water	Hydrogen and oxygen
Vinegar	Hydrogen, carbon and oxygen
Carbon dioxide	Carbon and oxygen
Baking soda	Sodium, hydrogen, carbon and oxygen
Brown sugar	Carbon hydrogen and oxygen



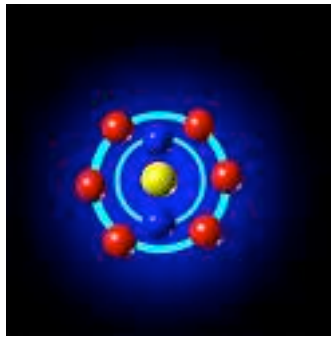
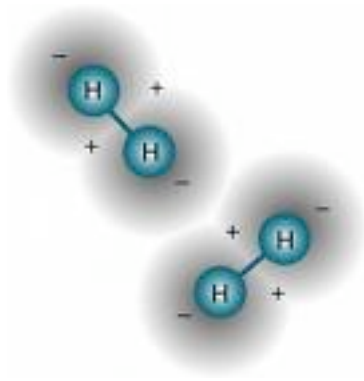
Ratio of Elements in a Compound

Elements do not mix randomly to form compounds

They form in a specific ratio according to their mass

This **ratio never changes**

Ex. Water is made of hydrogen and oxygen



The mass ratio is one gram of hydrogen for every eight grams of oxygen.

If a compound of hydrogen and oxygen did not have this 1:8 ratio, it cannot be water.

Properties of Compounds

Compounds have their own set of physical and chemical properties. Like elements, each compound has a different set of properties.

Ex. Density, melting point, color and flammability, reactivity

A compound has different properties than the elements that formed it.

Ex. Sodium reacts violently with water and is a silver metal

Chlorine is a poisonous gas that is greenish yellow

They form a compound known as salt. Salt is a white solid that dissolves easily in water and is able to be eaten.

Breaking Down Compounds

The two usual ways are by adding heat or electricity
Compounds are broken down into two substances:

1. Compounds can be broken down into their elements through chemical means

Ex. Water can be broken down into hydrogen and oxygen

2. Compounds can be broken down into simpler compounds and then into their elements through chemical means.

Ex. Carbonic Acid (complex compound) is broken down into water and carbon dioxide (simpler compounds) and they can be broken down into carbon hydrogen and oxygen (elements) through chemical means.

Compounds In Our World

Ammonia- used to make fertilizers

Aluminum oxide- when it is broken down, we can get
Aluminum

Carbon dioxide-used by plants for photosynthesis